MCA (Revised)

Term-End Examination

December, 2010

MCS-032 : OBJECT ORIENTED ANALYSIS AND DESIGN

Time : 3 Hours   *Maximum Marks : 100*

Note : *Question no. 1 is **compulsory**. Attempt **any three** questions from the rest.*

1. (a) Identify class, objects, instances,   5
        generalization, associations, inheritance of
        the followings :

    (i)   Computer - Operating system.

    (ii) Father - son.

    (iii) My Pilot Pen.

    (iv) Student - Ph.d. student.

    (v)   Taxi - Driver.

    (b) Draw a state diagram for online reservation   5
        of tickets (Railways).

(c)   Dr. Shyam is starting a medical practice. He wants a computerized system to manage the appointment maintain patients records and generate reports. When a patient calls for an appointment the receptionist will check the schedule and fixes the appointment as the earlier date. The receptionist will enter the appointment with the patient's name, purpose of appointment and the date of appointment agreed upon.

The system will verify the patients name and supply the necessary details from the patients records. Perform the following tasks :

(i)   Draw a class - diagram.   5

(ii)   Draw an object diagram.   5

(iii) Draw use case diagram.   4

(iv)   Draw association and inheritance   6
       diagram.

(v)   Draw the sequence diagram.   5

(d)   What do you mean by Association in a UML   5
      diagram ? Briefly describe various types of
      Associations available in UML.

2. Differentiate between the followings with appropriate examples : 5x4=20

   (a) Specialization and Generalization.

   (b) Package and subsystem.

   (c) Object oriented database Relational database.

   (d) System Analysis and Design and Object Oriented analysis and design.

   (e) Strong typing and weak typing.

3. (a) Define the following terms : 10

   (i) Deployment diagram.

   (ii) Serialization.

   (iii) Abstraction.

   (iv) Package diagram.

   (v) Delegation.

   (b) Draw a DFD for making payment of reregistration fee. 5

   (c) Draw an instance diagram of the following arithmetic express. 5

   $A = B \times C \div D \times E$

4. (a) List and explain all types of relationship existing in UML with its notations. 14

   (b) Show the process of mapping of ternary associations to tables through an example. 6

5. (a) What are the various models developed in   5
        object oriented modeling and design ?
        Which of the models is most important and
        why ?

    (b) Define integrity constraints. Explain the   5
        types of integrity constraints.

    (c) Describe dynamic model. Give a sample of
        a dynamic model.   2+3

    (d) What is the advantage of two - way   5
        association ? Explain.

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